

U.S. Patent Application Serial No. 10/531,075

Response filed June 18, 2009

Reply to OA dated February 18, 2009

REMARKS

By the present amendment, independent claims 1 and 5 have been amended to obviate the examiner's objections thereto and/or to further clarify the concepts of the present invention. In particular, these claims have been amended to delete "polyethylene resin" and "polypropylene resin" from the recitation of the resin for the substrate layer. In addition, claim 1 has been amended to include the subject matter of dependent claim 2. Consequently, dependent claim 2 has been canceled. Entry of these amendments is respectfully requested.

It is submitted that these amendments to the claims are helpful in distinguishing the subject claims over the cited prior art and do not raise new issues which would require further consideration and/or search. In addition, it is submitted that such amendments place the application in better form for appeal by materially reducing or simplifying the issues for appeal. Furthermore, no additional claims are presented without cancelling a corresponding number of finally rejected claims. In view of the above, it is submitted that entry of the above amendments is in order and such is respectfully requested.

In the Office Action, claims 1, 2 and 5 were rejected under 35 USC § 103(a) as being unpatentable over the previously cited PCT publication to Dobler et al in view of the newly cited patent to Fisher et al. In so doing, it was asserted that the Dobler et al patent publication teaches a heat shielding material of, for example, polyolefins such as polypropylene containing a filler of antimony doped tin oxide (commonly referred to as ATO). While it was acknowledged that the

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Dobler et al patent does not teach the inclusion of lanthanum hexaboride as now recited in the subject claims, it was asserted that the inclusion of such would be apparent to one of skilled in the art in view of the Fisher et al patent. Specifically, it was asserted that this latter patent teaches or suggests that lanthanum hexaboride is an obvious functional equivalent IR absorbing material like ATO. Reconsideration of this rejection in view of the above claim amendments and the following comments is requested.

As was set forth in the prior response, the composition of the Dobler et al patent contains polycarbonate, a thermoplastic resin such as polypropylene or the like, and oxide particles such as ITO, ATO, FTO and AZO or the like, the surfaces of which have been modified. In this regard, attention is again directed to claim 1; column 5, lines 32-40; and column 3, line 62 to column 4, line 17 of the patent. In view of this disclosure, it is submitted that a substrate resin of polyvinyl chloride resin as presently claimed is not taught as a substrate resin and that "lanthanum hexaboride" is not used as a heat shield filler. Consequently, it is submitted that, the composition of the Dobler et al patent differs in construction from the heat shielding materials for an agricultural and horticultural facility of independent claim 1 and claim 5 as presently amended.

In addition, it is submitted that, as also set forth in the prior response, ITO particles were used in a greater quantity in example 3 of the Dobler et al patent than that in the heat shielding materials for an agricultural and horticultural facility according to claim 1 and claim 5. In this respect, the heat shielding material for an agricultural and horticultural facility of each of claim 1 and claim 5 that is

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capable of remarkably lowering the content of the heat shield filler (the content of lanthanum hexaboride being from 0.01 to 1 g/m²) distinctly distinguishes from the composition of the Dobler et al patent.

It is further submitted that the above-noted teaching deficiencies of the Dobler et al patent which merely discloses an invention relating to "a resin composition in which a polypropylene resin and ATO particles are contained by way of example" are not supplied by the cited patent to Fisher et al. Among other things, it would appear that the Fisher et al patent only teaches "including lanthanum hexaboride as filler in an IR absorbing polyvinyl butyral composition." In particular, the Fisher et al patent discloses a heat shielding glass laminate in which lanthanum hexaboride and ATO are used as heat shielding fillers, and PVB (polyvinyl butyral) is used as a binder.

Inasmuch as the two cited patents are directed to "different resins and different particles," respectively, it is submitted that there is no technical reason for combining the Dobler et al patent with the Fisher et al patent. Further, even if these patents are combined, the construction recited in each of claim 1 and claim 5 cannot be achieved.

Specifically, given that the "polyvinyl chloride resin" is not used as a substrate resin in the composition of the Fisher et al patent, the disclosed composition is entirely different in construction from the heat shielding materials for an agricultural and horticultural facility of claim 1 and claim 5. The Fisher et al patent only teaches a composition in which "lanthanum hexaboride is included as a filler in the IR absorbing polyvinyl butyral composition."

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In summary, and as discussed above, the Dobler et al patent merely discloses a material relating to "a resin composition in which a thermoplastic resin such as polypropylene or the like and ATO particles or the like are contained by way of example," and the Fisher et al patent apparently only teaches "including as a filler lanthanum hexaboride in an IR polyvinyl butyral composition." Since, the Dobler et al patent and the Fisher et al patent are directed to "different resins and different particles," respectively, there would be no technical reason for combining the teachings of Dobler et al patent with the Fisher et al patent as in the present rejection.

Additionally, even if the Dobler et al patent which allegedly discloses a resin composition containing "a thermoplastic resin such as polypropylene or the like and ATO particles or the like by way of example" is combined with the Fisher et al patent which allegedly teaches "including as a filler lanthanum hexaboride in an IR absorbing polyvinyl butyral composition," it is submitted that a "heat shielding material for an agricultural and horticultural facility comprising polyvinyl chloride as a substrate resin and lanthanum hexaboride as a heat shield filler," the subject matter of each of claim 1 and claim 5, would not be achieved. Thus, it is submitted that the heat shielding materials for an agricultural and horticultural facility according to amended claim 1 and claim 5 would not be obvious over these cited patents.

Additionally, it is submitted that the Dobler et al patent, and the Fisher et al patent as all cited above do not disclose the construction "the content of the lanthanum hexaboride is in the range of 0.01 to 1 g/m²" as recited in each of claim 1 and claim 5.

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In summary, it is submitted that one of ordinary skill in the art would not be led to combine the teachings of the two separate patents to achieve the presently claimed invention. In particular, it must be emphasized in support of the patentability of the subject invention over the teachings of the cited patents is that neither provides a suggestion to motivate one of ordinary skill in the art to combine their teachings in the manner proposed by the examiner. While the Dobler et al patent is directed to an IR absorbing composition containing ATO particles, the Fisher et al patent relates to the inclusion of totally different particles in a totally different resin. It is a well established principle of U.S. patent practice that the prior art must contain some suggestion for combination since without such, any combination is pure speculation on the part of the examiner and is based on a prohibited hindsight reconstruction from applicants' own disclosure.

Accordingly, withdrawal of the rejection is respectfully requested.

In addition, claims 1, 2 and 5 were rejected under 35 USC § 103(a) as being unpatentable over the newly cited patent to Hayashi et al in view of the patent to Fisher et al. In this rejection, the former patent is asserted to teach the combination of polyethylene and lanthanum hexaboride where the latter is at least 0.5% by weight. The Fisher et al patent was apparently only cited for the amount of lanthanum hexaboride to be included in a particular composition. Reconsideration of this rejection in view of the above claim amendments and the following comments is respectfully requested.

It is submitted that the patent to Hayashi et al, whether taken singly or in combination, does not teach or suggest the presently claimed invention. In this regard, it is submitted that the Hayashi

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et al patent merely discloses a composition which is unrelated to a heat shielding material, but rather relates to "a process for the production of polyethylene compositions in which filler is dispersed uniformly irrespective of the amount of the filler such as metal, lanthanum boride or the like added and the separation of the filler does not occur."

Specifically, the Hayashi et al patent describes at column 1, line 62 to column 2, line 9 that:

"An object of the present invention is to provide a process for the production of polyethylene compositions in which filler is dispersed uniformly irrespective of the amount of the filler added and the separation of the filler does not occur. Another object of the present invention is to provide a process for the production of the above polyethylene compositions with high efficiency and without the use of a large amount of energy. Still another object of the present invention is to provide a process for the production of the above polyethylene compositions in a good operation environment. A further object of the present invention is to provide a process for the production of the above polyethylene compositions without the wear of a kneader even if the filler compounded has a high hardness."

From the above description, it is submitted that the Hayashi et al patent does not disclose a composition related to a heat shielding material, but rather is concerned with "a process for the production of polyethylene compositions in which filler is dispersed uniformly irrespective of the amount of the filler added and the separation of the filler does not occur." Further, the Hayashi et

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al patent describes at column 9, line 63 to column 10, line 9 that "The polyethylene composition produced by the process of the present invention can find numerous uses. When copper, aluminum or carbon black, for example, is used as the filler, the resulting polyethylene composition can be used in preparation of electrically conductive materials or electromagnetic shielding materials. When ferrite, for example, is used, the polyethylene composition can be used in preparation of dumper. When carbon black, iron, iron oxide, titanium white, or organic pigments, for example, are used, the polyethylene composition can be used as the master batch for coloring. When ceramics are used as the filler, the polyethylene composition can be used in preparation of abrasion resistant materials, heat conductive materials, electrical insulation materials, or neutron blocking materials."

As is evident from the above, the polyethylene composition of the Hayashi et al patent is utilized as "electrically conductive materials, electromagnetically shielding materials, dumping materials, abrasion resistant materials, heat conductive materials, electrical insulation materials, and neutron blocking materials," which materials are used only in an entirely different field from the heat shielding material for an agricultural and horticultural facility according to the presently claimed invention.

Inasmuch as the polyethylene composition of the Hayashi et al patent is a material used in a field different from a heat shielding material for an agricultural and horticultural facility, there is no disclosure with regard to the optical properties of this polyethylene composition, of the need to provide the characteristic "a visible light transmittance in the range of 30 to 90% and a solar radiation transmittance in the range of 10 to 80%, the visible light transmittance being set to be larger

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by 10% or above than the solar radiation transmittance." The characteristic noted here is required in the heat shielding material for an agricultural and horticultural facility.

In summary, and as discussed above, the Hayashi et al patent merely discloses a material which is unrelated to the heat shielding material for an agricultural and horticultural facility according to the presently claimed invention. Rather, the disclosure is concerned with "a process for the production of polyethylene compositions in which filler is dispersed uniformly irrespective of the amount of the filler such as metal, lanthanum boride or the like added and the separation of the filler does not occur." In addition, the Fisher et al patent only teaches "including as lanthanum hexaboride as a filler in an IR absorbing polyvinyl butyral composition."

Since the Hayashi et al patent and the Fisher et al patent reside in their respective different technical fields and are directed to "different resins," there is no technical reason for combining these patents.

Therefore, even if the teachings of the Hayashi et al patent which discloses "a process for the production of polyethylene compositions in which filler is dispersed uniformly irrespective of the amount of the filler such as metal, lanthanum boride or the like added and the separation of the filler does not occur" are combined with those of the Fisher et al patent which only teaches "including as lanthanum hexaboride as a filler in an IR absorbing polyvinyl butyral composition," the heat shielding material for an agricultural and horticultural facility of each of claim 1 and claim 5 would not be realized. That is, the subject heat shielding material for an agricultural and

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horticultural facility provides the characteristic "a visible light transmittance in the range of 30 to 90% and a solar radiation transmittance in the range of 10 to 80%, the visible light transmittance being set to be larger by 10% or above than the solar radiation transmittance" and comprises "polyvinyl chloride as a substrate resin and lanthanum hexaboride as a heat shield filler" cannot be constructed.

Additionally, it is to be noted that neither of the Fisher et al patent and the Hayashi et al patent disclose a composition where "the content of the lanthanum hexaboride is in the range of 0.01 to 1 g/m²" as recited in each of claim 1 and claim 5.

For the reasons stated above, withdrawal of the rejection under 35 U.S.C. § 102(b) and allowance of claims 1 and 5 as amended over the cited patent publication are respectfully requested.

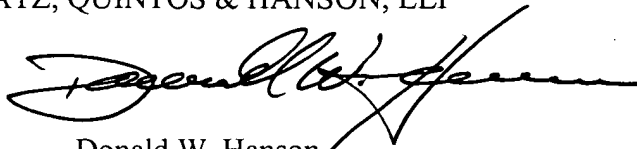
In view of the foregoing, it is submitted that the subject application is now in condition for allowance and early notice to that effect is earnestly solicited.

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In the event this paper is not timely filed, the undersigned hereby petitions for an appropriate extension of time. The fee for this extension may be charged to Deposit Account No. 01-2340, along with any other additional fees which may be required with respect to this paper.

Respectfully submitted,

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Enclosure: Petition for Extension of Time